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ABSTRACT

In this period of limited financial resources and educational manpower, community colleges can benefit from the application of strategic management techniques to determine how to use their resources most effectively while addressing community needs. At Delta College, this approach was adopted to assess community needs for agricultural programs and the college's potential for developing such programs. Faced with voter dissatisfaction with Delta's programs and national data indicating a need for agricultural training, Delta conducted an assessment of the educational needs of local farmers. The study revealed that short courses in areas such as crop disease, farm records, and insecticide and herbicide application were most needed; that local schools or community colleges were the preferred locations for classes; and that programs offered in concentrated time blocks were favored. An assessment of Delta's facilities indicated that the college had the resources to meet the expressed needs of the community. Based on this information, two courses were developed during the first year, a workshop on the agricultural uses of hydraulics and a week-long workshop on welding in farm settings. In the second year, programs were offered in diesel engine maintenance, data processing for farmers, and farm building construction. So far all classes have been well attended, and plans are being made to offer formal academic courses in agriculture in cooperation with Michigan State University. The survey instrument is appended. (HB)

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COMMUNITY COLLEGES AND AGRICULTURAL EDUCATION: STRATEGIES FOR SERVING A NEW MARKET

By

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In the words of a tune popular a few years ago, "The Times They Are a Changing", and educators will need to change with them. The changing demographic characteristics of the population, tighter funding availability, and demands for more efficiency and effectiveness from the educational system all suggest that the future holds both the threat and challenge of altering traditional educational procedures.

Educators are often advised to look to the private sector for management techniques which could improve the capabilities of the educational system. While there is a natural tendency for educators to forcefully point out the major differences between a business and an educational institution, there are some management techniques that merit consideration, often after modification to fit the unique dimensions of the educational mission.

The current realities of limited educational manpower and financial resources demands that resources not be wasted in unproductive activities. In business management, a related concern for protecting scarce resources and avoiding non-productive activities has given rise to the concept of strategic thinking in many areas of management. While it is difficult to attribute the original development of this way of approaching business decisions to any one person, a statement by Peter Drucker has nicely captured the essence of the concept: "The pertinent question is not how to do things right but, how to find the right things to do and to concentrate resources and efforts on them." [1] Strategic management involves analyzing the goals of the

organization, the facilities and human resources available to undertake new programs or products, and an assessment of the needs of the potential customer, both now and in the future. The emphasis in this concept is on gathering data and carefully thinking through the inner connections between what the organization can and wants to do, with what the consumer needs and is willing to buy. This approach applied to the educational setting simply combines the well understood need for community needs assessment with careful analysis of what potentialities an institution has available for program development. Finally, strategic thinking requires the setting of priorities and the marshalling of resources to work on the most important assignments first and to put aside other tasks until a later time.

This paper is intended to illustrate some of the elements of strategic management through a case study involving the development of an agricultural program at Delta College, a public community college serving a three-county district in East Central Michigan. The reader will quickly note two things about the study: The decisions that were made contain the normal quantity of errors and poor judgments; and, while the agriculture program at Delta is currently operating, it is limited and not yet comparable with many of the well-established agricultural programs in such community colleges as Kirkwood in Iowa and John Wood Community College in Illinois. The focus of the paper in on a strategic process for instituting an agricultural program, rather than a

description of a demonstration program.

In a community college, all programs theoretically begin with the identification of a need in the community. The difference between theory and reality is often the substantial difficulty of figuring out what it is the community actually wants. In the case of rural residents of the Delta College district in 1978, a medium existed to clearly send a message concerning their reaction to a lack of agricultural programming--a proposed increase in millage to operate the college. At that time the college had no academic credit courses in agriculture and only an occasional conference or workshop. The Delta district contains three cities with 35,000 people or more; however, in total about 36 percent of the population reside in rural locations. The land within the three-county district is flat and fertile, creating an agricultural region which produces nationally significant crops of sugar beets, navy beans, soy beans, and corn. The training in agriculture that has been available is offered by Michigan State University (from one to three hours distant from various points in the college district) and the Cooperative Extension Service located in each county seat.

Farmers voting on the small millage increase for community college operation in 1978 had an opportunity to register their opinion on the extent to which Delta had been addressing their educational needs. When the results of the election were tallied the issue passed in the total district, but was soundly defeated in rural areas. In one rural precinct, 146 votes were cast--

145 No! With election results of this type in mind, a strong reason existed for the college to explore the possibility of offering agricultural programs for interested persons.

Other reasons for looking at agriculture as a potential programming area existed as well. Agriculture is one of the basic industries in the United States. While only 3,650,000 people are engaged in it on a full-time basis, the U.S. produces enough food to meet the domestic needs of the country, as well as 20 percent of all agricultural exports in the world. The value of those exports, $40 billion in 1980, is one of the major elements of all exports from the United States, $220 billion.[2]

The dramatic growth in agricultural production that has been accomplished by a decreasing number of workers is one of the most striking chapers in the modern search for labor saving machinery, applied research and development, and production specialization. The new equipment used in agriculture is highly sophisticated, using the results of plant and soil research requires considerable scientific knowledge, and the financial requirements to become involved in farming and make it a profitable venture demand access to solid data and an ability to interpret that data.

Given the high levels of skills and possession of knowledge of those involved in moder agriculture, it is interesting to note that the National Assessment of Educational Progress conducted by the U.S. Department of Health, Education, and Welfare from 1969-73 found rural school children possessed below national

average skills in writing, math, and science.[3]

The apparent gap between the quality of educational training in rural areas and the educational needs of successful farming creates what is referred to in strategic marketing as a "window of opportunity." A national survey of a large sample of community colleges in 1980 discovered that only about a quarter of community colleges saw agriculture as sufficiently attractive to actually offer courses in that area.[4]

A strategic review of areas in which a community college should be involved would need to start with a review of the needs of its community, and the resources available to the college to meet those needs. The national data cited here suggests that training needs exist in the agricultural sector; however, a more careful analysis of the extent of that need in an individual district would be needed to determine if these national trends are locally pertinent.

Faced with a negative reaction to a millage election and these national data, Delta College, in cooperation with the College of Agriculture at Michigan State University, and the Cooperative Extension Offices in Bay, Saginaw, and Midland Counties prepared a survey (appendix A) which was sent to those farmers on the regular mailing lists of the County Extension Offices from the three counties in the college district, as well as three adjacent counties. The results of the survey provided some interesting data on the educational needs of farm populations:

1. The types of educational programming most requested were workshops or short courses on such topics as commodities and futures, crop diseases, farm records, insecticides and herbicide application, and fertilizers.

2. The instructional programs developed should be offered at the community college or in local school facilities, rather than at a distant university campus.

3. The programs should be offered in concentrated time blocks during the period of the first of December to the end of March, rather than in traditional academic semester schedules.

4. More formal courses in introductory agriculture were desired by a smaller portion of the sample; however, they did not want to have to travel extensively to take them.

Armed with this data and additional input from interviews with such individuals as Cooperative Extension agents, bank officials who deal with farm loans, farm equipment dealers, etc., a reasonable picture started to emerge of agriculture education needs in the district. As suggested in the strategic management model noted above, it is now necessary to shift focus to the resources available to the college to find specific points at which what the community needed and the college had available intersected.

The college had no history of successfully offering agricultural courses; however, an analysis of the many tasks involved in modern farming suggested some areas in which the college had facilities, equipment, and trained faculty. The two areas in

which there was an initial connection were a large, well-equipped welding center operated by the college which had previously been used by a large company to train industrial welders, and a well-equipped industrial hydraulics laboratory. Hydraulics is an important element of modern farm equipment. Knowledge of basic principles of hydraulics, service and repair information, and the comparative advantages of different types of hydraulic pumps and valves all appeared to be potentially beneficial to the farmer. A faculty member with strong industrial hydraulics background and some knowledge of agricultural application was asked to prepare a short workshop during the winter months. With limited publicity, the workshop provided 53 participants with information on agricultural uses of hydraulics.

Many types of farming involve hectic activity at certain times of the year. Equipment failures at those critical times can be very expensive. Various sources suggested that a program in welding would be particularly helpful to farmers to assist them in avoiding equipment downtime at important times. Working with a welding instructor who had some limited knowledge of the kinds of welding jobs to be done on a farm, and talking with farmers with more detailed knowledge, a week-long workshop was developed that focused on farm applications. That program was also filled to capacity. These two programs constituted the first year of college offerings. While the number of programs was not large, the level of success was reassuring, and it suggested that the

process used to arrive at program decisions was appropriate and worthwhile.

In the second year,a similar review of community needs and available college resources suggested several other programming possibilities. The presentors identified for these programs did not necessarily have a strong background in agricultural applications of their specialty; they did, however, have very strong knowledge of their subject and a willingness to do the homework to adapt their knowledge to farm topics. For example, an instructor with vast knowledge of residential and commercial construction techniques offered a program on how to construct pole buildings on farms, a data processing instructor offered a program on available computers and software for farmers considering purchase or rental of equipment to meet their particular needs, an instructor in automotive technology with a strong background in diesel engine servicing and repair offered a program in how to routinely service and maintain farm diesel engines. Each of these programs were well-advertised and were attended by at least 30 people. In coming years, some of these programs will be repeated and others added to the list as they are developed.

Plans are now being made in cooperation with Michigan State University to offer formal academic courses in agriculture at Delta, taught by University faculty or staff. The hope is to offer the classes in a special semester that would begin in early December and run to the end of March. If this arrangement

is successful, subsequent classes will be offered in rotation to eventually complete the schedule of basic courses and prepare students to step into junior level classes on the MSU campus if they can make arrangements.

CONCLUSION

The development of an agricultural program at Delta was necessitated by a community need that had not been responded to in the past. An assessment of the capabilities of the college suggested several areas of strength that could be converted to serve the farm market without much expenditure of funds. The result of the first tentative efforts has been the successful offering of a number of short courses or programs that have been well attended and received.

Educators familiar with program development models in community education will note that the strategic management model uniquely emphasizes finding matches between community needs and college resources, setting priorities on activities to insure that those programs most needed are the focus of attention, and producing a framework to help judge time and resource commitments in an era when both are in short supply.

FOOTNOTES

[1]Peter F. Drucker, Managing for Results, New York: Harper Row, 1974, p.6.

[2]United States Department of Agriculture, Agricultural Statistics, 1981, Washington: Government Printng Office, 1981.

[3]United States Department of Agriculture, Fact Book of U.S. Agriculture, Washington: Government Printing Office, 1980.

[4]Miriam M. Beckwith, "Science Education in Two-Year Colleges: Agriculture and Natural Resources", Los Angeles: Center for the Study of Community Colleges and ERIC Clearinghouse for Junior Colleges, 1980 (ERIC Number ED 180 567).

AGRICULTURAL EDUCATION AND TRAINING NEEDS STUDY

Delta College and Michigan State University are exploring several alternatives for extending services to the agriculture/agri-business community. The information in this survey will be used to help determine if there are additional training needs in agriculture. Individual responses will be kept confidential.

1. Farming is your: ___ Full-time occupation. ___ Part-time occupation. ___ Do not farm.

2. Please identify your type of farming operation. (Check (√) all that apply.)

___ Corn ___ Beans ___ Small Grain ___ Sugar Beets ___ Potatoes ___ Other Vegetables ___ Fruit ___ Livestock ___ Other (please specify) _____

3. Do you feel that you or anyone else in your family could benefit from education or training in agricultural-related topics, in addition to that already provided in this area?

___ No (If No, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED ENVELOPE. Thank you for your assistance.)

___ Yes
___ Maybe (If Yes or Maybe, PLEASE COMPLETE THE REMAINDER OF THIS QUESTIONNAIRE.)

WORKSHOPS AND SHORT COURSES

We would like your opinion about the need for additional training in the form of one-day workshops or short course sessions. These would focus on special problems and concerns. (Questions about formal credit courses and degree programs are on the reverse side.)

4. In which of the following areas do you see a need for additional training? (Check (√) all that apply.)

___ Soil erosion
___ Crop diseases
___ Crop insects
___ Fertilizers
___ Insecticide and herbicide application
___ Selecting machinery
___ Fuel for farm power
___ Windmills
___ Solar energy
___ Air conditioning
___ Antibiotics in feed
___ Organic farming
___ Farm records
___ Commodities and futures
___ Mini-computers on farms

___ Servicing diesel engines
___ Electric motors
___ Welders and welding
___ Hydraulics
___ Machine Shop
___ Farmland policy laws
___ Air pollution
___ EPA regulations
___ OSHA regulations
___ Farm credit
___ Other (please specify):
_____
_____

5. When is the best time of the year for you to participate? (Check (√) all that apply.)

___ Jan ___ Feb ___ Mar ___ Apr ___ May ___ Jun ___ Jul ___ Aug ___ Sep ___ Oct ___ Nov ___ Dec

6. What would be the best arrangement of time for the sessions?

___ One day, during the week.
___ One day, during the weekend.
___ 1-2 hours per day, 2-3 days a week.
___ One evening, during the week.
___ One day and evening, during the week.
___ Other (please specify) _____

7. Where would you prefer the education/training be offered?

___ Delta College campus
___ Local high school
___ Other (please specify) _____

(over)

CREDIT COURSES AND DEGREE PROGRAMS

One of the alternatives being considered by Delta and MSU focuses on credit courses which would help students prepare for technical and professional careers in agriculture, as well as for careers as outstanding producers of agricultural products.

MSU currently offers both professional and technical training programs in agriculture. The thirteen technical agriculture programs include five specialized areas in farm production. The technical programs at MSU generally require two years of preparation: two fall terms and two winter terms on campus and work-experience during the in-between terms of spring and summer.

8. Would you or any member of your family be interested in enrolling in a two-year agricultural technology program offered at Delta College?

___ No ___ Yes

If Yes,

a. What program area(s) is(are) of special interest?

___ Dairy
___ Livestock
___ Crop Production
___ Fruit Production
___ Elevator and Farm Supply
___ Vegetable Production
___ Soil and Chemical Technology
___ Landscape and Nursery
___ Turfgrass Management
___ Animal Technology
___ Electrical Technology
___ Commercial Floriculture
___ Power and Equipment Technology

b. Where would you like to take the courses?

___ All at Delta.
___ Fall terms at Delta, other terms at MSU.
___ Winter terms at MSU, other terms at Delta.

c. When would you like to take the courses?

___ All during fall terms.
___ All during winter terms.
___ Combination of fall and winter terms.
___ Combination of winter and spring terms.
___ Other (please specify) _____

9. Would you or any member of your family be interested in enrolling in a four-year degree program in agriculture and natural resources?

___ No ___ Yes

If Yes,

a. Would you like to start the program by taking courses at Delta (and transfer no more than two years to MSU)?

Agricultural courses	___ Yes	___ No
General education courses	___ Yes	___ No

b. What are the program areas which are of special interest? _____

_____

OPTIONAL:
Name _____
Address _____
_____

RETURN TO:

Delta College
University Center, MI 48710
Attention: Agriculture Survey

(11/81) 111

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